

This listing of claims will replace all prior versions, and listings, of claims in the application:

- 1 Claim 1 (previously presented): A computer-implemented  
2 method for determining user profile information for a user,  
3 the computer-implemented method comprising:  
4 a) determining initial user profile information for  
5 the user using information included in past search  
6 queries submitted to a search engine by the user,  
7 wherein such information is independent of documents  
8 returned as search results to the past search queries;  
9 b) inferring user profile information for the user;  
10 and  
11 c) determining the user profile information for the  
12 user using both the initial user profile information  
13 and the inferred user profile information.

Claim 2 (canceled)

- 1 Claim 3 (previously presented): The computer-implemented  
2 method of claim 1 wherein the act of determining an initial  
3 user profile information for the user further uses past  
4 document selections by the user.

Claim 4 (canceled)

- 1 Claim 5 (previously presented): The computer-implemented  
2 method of claim 1 wherein the initial user profile includes  
3 a plurality of attributes, each of the plurality of  
4 attributes having a value and a score.

1 Claim 6 (previously presented): The computer-implemented  
2 method of claim 5 wherein the score indicates a likelihood  
3 that the value of the attribute is correct.

1 Claim 7 (previously presented): A computer-implemented  
2 method for determining user profile information for a user,  
3 the computer-implemented method comprising:  
4 a) determining initial user profile information for  
5 the user;  
6 b) inferring user profile information for the user;  
7 and  
8 c) determining the user profile information for the  
9 user using both the initial user profile information  
10 and the inferred user profile information,  
11 wherein the act of inferring user profile  
12 information for the user includes  
13 i) defining a node for each of a number of  
14 documents and the user, wherein each node  
15 represents a particular one of the number of  
16 documents or the user,  
17 ii) adding edges between nodes if there is an  
18 association between the nodes to define a graph,  
19 and  
20 iii) inferring user profile information for the  
21 user using a topology of the graph and user  
22 profile information of other documents.

1 Claim 8 (previously presented): The computer-implemented  
2 method of claim 7 wherein an edge is added between first  
3 and second nodes if a document corresponding to the first  
4 node was returned in a search results page to a search  
5 query from the user corresponding to the second node.

1 Claim 9 (previously presented): The computer-implemented  
2 method of claim 7 wherein an edge is added between first  
3 and second nodes if a document corresponding to the first  
4 node was selected by the user corresponding to the second  
5 node.

1 Claim 10 (previously presented): The computer-implemented  
2 method of claim 7 wherein an edge is added between first  
3 and second nodes if a document corresponding to the first  
4 node is linked with a document corresponding to the second  
5 node.

1 Claim 11 (previously presented): The computer-implemented  
2 method of claim 7 wherein an edge is added between first  
3 and second nodes if a document corresponding to the first  
4 node was visited by a set of users that have visited  
5 another document corresponding to the second node.

1 Claim 12 (previously presented): The computer-implemented  
2 method of claim 7 wherein an edge is added between first  
3 and second nodes if a user corresponding to the first node  
4 visited a set of one or more documents also visited by  
5 another user corresponding to the second node.

1 Claim 13 (previously presented): The computer-implemented  
2 method of claim 7 wherein the act of inferring user profile  
3 information for the user using a topology of the graph  
4 includes  
5 i) multiplying the initial user profile information  
6 of the user by a first value to generate a first  
7 product;

- 8       ii) multiplying user profile information of  
9       neighboring graph nodes by a second value to generate  
10       a second product; and  
11       iii) adding the first product and the second product.

1   Claim 14 (previously presented): A computer-implemented  
2   method for determining user profile information for a  
3   document, the computer-implemented method comprising:  
4       a) determining initial user profile information for  
5       the document;  
6       b) inferring user profile information for the  
7       document;  
8       c) determining the user profile information for the  
9       document using both the initial user profile  
10       information and the inferred user profile information;  
11       d) associating with the document, the determined user  
12       profile information for the document; and  
13       e) storing the association of the document with the  
14       determined user profile information for the document.

1   Claim 15 (previously presented): The computer-implemented  
2   method of claim 14 wherein the act of determining an  
3   initial user profile information for the document uses  
4   content information from the document.

1   Claim 16 (previously presented): The computer-implemented  
2   method of claim 14 wherein the act of determining initial  
3   user profile information for the document uses document  
4   meta information.

1   Claim 17 (previously presented): The computer-implemented  
2   method of claim 14 wherein the act of determining initial

3 user profile information for the document uses (i) content  
4 information from the document, and (ii) document meta  
5 information.

1 Claim 18 (previously presented): The computer-implemented  
2 method of claim 14 wherein the initial user profile  
3 information includes a plurality of attributes, each of the  
4 plurality of attributes having a value and a score.

1 Claim 19 (previously presented): The computer-implemented  
2 method of claim 18 wherein the score indicates a likelihood  
3 that the value of the attribute is correct.

1 Claim 20 (previously presented): The computer-implemented  
2 method of claim 14 wherein the act of inferring user  
3 profile information for the document includes  
4 i) defining a node for each of a number of  
5 documents and for each of a number of users,  
6 wherein each node represents a particular one of  
7 the number of documents or a particular one of  
8 the number of users,  
9 ii) adding edges between nodes if there is an  
10 association between the nodes to define a graph,  
11 and  
12 iii) inferring user profile information for the  
13 document using a topology of the graph and user  
14 profile information of users and of other  
15 documents.

1 Claim 21 (previously presented): The computer-implemented  
2 method of claim 20 wherein an edge is added between first  
3 and second nodes if a document corresponding to the first

4 node was returned in a search results page to a search  
5 query from the user corresponding to the second node.

1 Claim 22 (previously presented): The computer-implemented  
2 method of claim 20 wherein an edge is added between first  
3 and second nodes if a document corresponding to the first  
4 node was selected by the user corresponding to the second  
5 node.

1 Claim 23 (previously presented): The computer-implemented  
2 method of claim 20 wherein an edge is added between first  
3 and second nodes if a document corresponding to the first  
4 node is linked with a document corresponding to the second  
5 node.

1 Claim 24 (previously presented): The computer-implemented  
2 method of claim 20 wherein an edge is added between first  
3 and second nodes if a document corresponding to the first  
4 node was visited by a set of users that have visited  
5 another document corresponding to the second node.

1 Claim 25 (previously presented): The computer-implemented  
2 method of claim 20 wherein an edge is added between first  
3 and second nodes if a user corresponding to the first node  
4 visited a set of one or more documents also visited by  
5 another user corresponding to the second node.

1 Claim 26 (previously presented): The computer-implemented  
2 method of claim 20 wherein the act of inferring user  
3 profile information for the document using a topology of  
4 the graph includes

- 5        i) multiplying the initial user profile information
- 6        of the document by a first value to generate a first
- 7        product;
- 8        ii) multiplying user profile information of
- 9        neighboring graph nodes by a second value to generate
- 10       a second product; and
- 11       iii) adding the first product and the second product.

Claims 27-32 (canceled)

- 1    Claim 33 (previously presented): Apparatus for determining
- 2    user profile information for a user, the apparatus
- 3    comprising:
- 4        a) means for determining initial user profile
- 5        information for the user using information included in
- 6        past search queries submitted by the user, wherein
- 7        such information is independent of documents returned
- 8        as search results to the past search queries;
- 9        b) means for inferring user profile information for
- 10       the user; and
- 11       c) means for determining the user profile information
- 12       for the user using both the initial user profile
- 13       information and the inferred user profile information.

Claim 34 (canceled)

- 1    Claim 35 (previously presented): The apparatus of claim 33
- 2    wherein the means for determining an initial user profile
- 3    information for the user further use past document
- 4    selections by the user.

Claim 36 (canceled)

1 Claim 37 (original): The apparatus of claim 33 wherein the  
2 initial user profile includes a plurality of attributes,  
3 each of the plurality of attributes having a value and a  
4 score.

1 Claim 38 (original): The apparatus of claim 37 wherein the  
2 score indicates a likelihood that the value of the  
3 attribute is correct.

1 Claim 39 (previously presented): Apparatus for determining  
2 user profile information for a user, the apparatus  
3 comprising:  
4 a) means for determining initial user profile  
5 information for the user;  
6 b) means for inferring user profile information for  
7 the user; and  
8 c) means for determining the user profile information  
9 for the user using both the initial user profile  
10 information and the inferred user profile information,  
11 wherein the means for inferring user profile  
12 information for the user include means for  
13 i) defining a node for each of a number of  
14 documents and the user, wherein each node  
15 represents a particular one of the number of  
16 documents or the user,  
17 ii) adding edges between nodes if there is an  
18 association between the nodes to define a graph,  
19 and  
20 iii) inferring user profile information for the  
21 user using a topology of the graph and user  
22 profile information of other documents.



1 Claim 40 (original): The apparatus of claim 39 wherein the  
2 means for adding edges adds an edge between first and  
3 second nodes if a document corresponding to the first node  
4 was returned in a search results page to a search query  
5 from the user corresponding to the second node.

1 Claim 41 (original): The apparatus of claim 39 wherein the  
2 means for adding edges adds an edge between first and  
3 second nodes if a document corresponding to the first node  
4 was selected by the user corresponding to the second node.

1 Claim 42 (original): The apparatus of claim 39 wherein the  
2 means for adding edges adds an edge between first and  
3 second nodes if a document corresponding to the first node  
4 is linked with a document corresponding to the second node.

1 Claim 43 (original): The apparatus of claim 39 wherein the  
2 means for adding edges adds an edge between first and  
3 second nodes if a document corresponding to the first node  
4 was visited by a set of users that have visited another  
5 document corresponding to the second node.

1 Claim 44 (original): The apparatus of claim 39 wherein the  
2 means for adding edges adds an edge between first and  
3 second nodes if a user corresponding to the first node  
4 visited a set of one or more documents also visited by  
5 another user corresponding to the second node.

1 Claim 45 (original): The apparatus of claim 39 wherein the  
2 means for inferring user profile information for the user  
3 using a topology of the graph include means for

- 4 i) multiplying the initial user profile information
- 5 of the user by a first value to generate a first
- 6 product;
- 7 ii) multiplying user profile information of
- 8 neighboring graph nodes by a second value to generate
- 9 a second product; and
- 10 iii) adding the first product and the second product.

1 Claim 46 (previously presented): Apparatus for determining  
2 user profile information for a document, the apparatus  
3 comprising:

- 4 a) means for determining initial user profile
- 5 information for the document;
- 6 b) means for inferring user profile information for
- 7 the document;
- 8 c) means for determining the user profile information
- 9 for the document using both the initial user profile
- 10 information and the inferred user profile information;
- 11 d) means for associating with the document, the
- 12 determined user profile information for the document;
- 13 and
- 14 e) means for storing the association of the document
- 15 with the determined user profile information for the
- 16 document.

1 Claim 47 (original): The apparatus of claim 46 wherein the  
2 means for determining an initial user profile information  
3 for the document use content information from the document.

1 Claim 48 (original): The apparatus of claim 46 wherein the  
2 means for determining initial user profile information for  
3 the document use document meta information.

1 Claim 49 (original): The apparatus of claim 46 wherein the  
2 means for determining initial user profile information for  
3 the document use (i) content information from the document,  
4 and (ii) document meta information.

1 Claim 50 (original): The apparatus of claim 46 wherein the  
2 initial user profile information includes a plurality of  
3 attributes, each of the plurality of attributes having a  
4 value and a score.

1 Claim 51 (original): The apparatus of claim 50 wherein the  
2 score indicates a likelihood that the value of the  
3 attribute is correct.

1 Claim 52 (original): The apparatus of claim 46 wherein the  
2 means for inferring user profile information for the  
3 document include means for  
4 i) defining a node for each of a number of  
5 documents and for each of a number of users,  
6 ii) adding edges between nodes if there is an  
7 association between the nodes to define a graph,  
8 and  
9 iii) inferring user profile information for the  
10 document using a topology of the graph and user  
11 profile information of users and of other  
12 documents.

1 Claim 53 (original): The apparatus of claim 52 wherein the  
2 means for adding edges adds an edge between first and  
3 second nodes if a document corresponding to the first node

4 was returned in a search results page to a search query  
5 from the user corresponding to the second node.

1 Claim 54 (original): The apparatus of claim 52 wherein the  
2 means for adding edges adds an edge between first and  
3 second nodes if a document corresponding to the first node  
4 was selected by the user corresponding to the second node.

1 Claim 55 (original): The apparatus of claim 52 wherein the  
2 means for adding edges adds an edge between first and  
3 second nodes if a document corresponding to the first node  
4 is linked with a document corresponding to the second node.

1 Claim 56 (original): The apparatus of claim 52 wherein the  
2 means for adding edges adds an edge between first and  
3 second nodes if a document corresponding to the first node  
4 was visited by a set of users that have visited another  
5 document corresponding to the second node.

1 Claim 57 (original): The apparatus of claim 52 wherein the  
2 means for adding edges adds an edge between first and  
3 second nodes if a user corresponding to the first node  
4 visited a set of one or more documents also visited by  
5 another user corresponding to the second node.

1 Claim 58 (original): The apparatus of claim 52 wherein the  
2 means for inferring user profile information for the  
3 document using a topology of the graph include means for  
4 i) multiplying the initial user profile information  
5 of the document by a first value to generate a first  
6 product;

- 7        ii) multiplying user profile information of  
8        neighboring graph nodes by a second value to generate  
9        a second product; and  
10       iii) adding the first product and the second product.

Claims 59-64 (canceled)

1    Claim 65 (previously presented): The computer-implemented  
2    method of claim 14 wherein the determined user profile  
3    information is associated with the document, not with a  
4    user.

1    Claim 66 (previously presented): The apparatus of claim 46  
2    wherein the determined user profile information is  
3    associated with the document, not with a user.

Claims 67 and 68 (canceled)

1    Claim 69 (previously presented): The computer-implemented  
2    method of claim 1 further comprising:  
3        d) controlling the serving of an advertisement to the  
4        user using the determined user profile information.

1    Claim 70 (previously presented): The computer-implemented  
2    method of claim 7 further comprising:  
3        d) controlling the serving of an advertisement to the  
4        user using the determined user profile information.

1    Claim 71 (previously presented): The computer-implemented  
2    method of claim 14 further comprising:  
3        f) controlling the serving of an advertisement with  
4        the document using the determined user profile

5 information for the document stored in association  
6 with the document.

Claim 72 (canceled)

1 Claim 73 (previously presented): The apparatus of claim 33  
2 further comprising:  
3 d) means for controlling the serving of an  
4 advertisement to the user using the determined user  
5 profile information.

1 Claim 74 (previously presented): The apparatus of claim 39  
2 further comprising:  
3 d) means for controlling the serving of an  
4 advertisement to the user using the determined user  
5 profile information.

1 Claim 75 (previously presented): The apparatus of claim 46  
2 further comprising:  
3 f) means for controlling the serving of an  
4 advertisement with the document using the determined  
5 user profile information for the document stored in  
6 association with the document.

Claim 76 (canceled)